

- 1) (Previously Amended) A process for delivering nucleic acids to muscle cells in a mammalian heart, comprising: a) accessing an *in vivo* blood vessel; b) inserting an injector into the blood vessel near or in the heart, *in vivo*; c) injecting a solution containing nucleic acids into the blood vessel lumen and increasing hydrostatic pressure in the lumen; and, d) delivering the nucleic acids to the heart muscle cells outside of the blood vessel via the pressure, wherein invasiveness is limited to accessing the blood vessel, inserting the injector into the blood vessel, and injecting the solution.
- 2) (Original) The process of claim 1 wherein the nucleic acid is expressed.
- 3) (Canceled)
- 4) (Previously Amended) The process of claim 2 wherein injecting the nucleic acid includes injecting the nucleic acid through a catheter.
- 5) (Previously Amended) The process of claim 4 wherein delivering the nucleic acid includes increasing the heart vessel permeability.
- 6) (Previously Amended) The process of claim 5 wherein the nucleic acid is selected from the group consisting of DNA, RNA, plasmid DNA, oligonucleotides, and nucleic acid contained in viruses.
- 7) (Canceled)
- 8) (Canceled)
- 9) (Canceled)
- 10) (Canceled)
- 11) (Canceled)
- 12) (Previously Amended) The process of claim 4 wherein injecting the nucleic acid includes injecting a predetermined volume of nucleic acid during a predetermined time.
- 13) (Previously Amended) The process of claim 12 wherein delivering the nucleic acid includes increasing the heart vessel permeability.
- 14) (Previously Amended) The process of claim 13 wherein the nucleic acid is selected from the group consisting of DNA, RNA, plasmid DNA, and nucleic acid contained in viruses
- 15) (Canceled)

- 16) (Canceled) The process of claim 15 wherein delivering the nucleic acid includes increasing the heart vessel permeability.
- 17) (Canceled) The process of claim 16 wherein the nucleic acid is selected from the group consisting of DNA, RNA, plasmid DNA, and nucleic acid contained in viruses.
- 18) (Previously Amended) A process for gene expression in mammalian heart muscle cells, comprising: a) accessing an in vivo blood vessel; b) inserting an injector into the blood vessel near or in the heart, in vivo; c) injecting a solution containing nucleic acids encoding a protein into the blood vessel lumen and increasing hydrostatic pressure in the lumen; d) delivering the nucleic acids to the heart muscle cells outside of the blood vessel via the pressure; and, e) expressing the nucleic acids to provide a therapeutic protein, wherein invasiveness is limited to accessing the blood vessel, inserting the injector into the blood vessel, and injecting the solution.
- 19) (Canceled)
- 20) (Previously Amended) The process of claim 18 wherein injecting the nucleic acid includes injecting the nucleic acid through a catheter.
- 21) (Original) The process of claim 1 wherein the nucleic acid consists of naked DNA.
- 22) (Original) The process of claim 18 wherein the nucleic acid consists of naked DNA.